

Appl. No. 10/758,384
Amdt. dated December 7, 2005
Reply to Office action of September 7, 2005

Remarks/Arguments

1. Rejections under 35 USC section 102(e)

In the Office action, claims 1, 8, and 14 were rejected under 35 USC section 102 as allegedly being anticipated by United States Patent Application Publication 2005/0037143 to Chou et al. [hereinafter Chou] which is a Continuation-in-Part of United States patent application 10/637,838 (United States Patent Application Publication 2004/0131718 to Chou et al.) having a filing date of August 8, 2003. See Office action, page 2. To summarize the standard, rejections under section 102 are proper only when one prior art reference discloses every feature of the claimed invention so that there is no physical difference between the reference and the claimed invention. See *In re Marshall*, 198 USPQ 44 (CCPA 1978). In addition, inchoate in any rejection pursuant to 35 USC section 102 is an obviousness rejection pursuant to 35 USC section 103. As a result, Applicants address any inchoate obviousness rejections along with the rejections under 35 USC section 102.

a. *Claim 1*

Claim 1, as amended, defines a patterning system, the system including, *inter alia*, a bifurcated heat transfer mechanism having a surface; and a source to direct thermal energy toward the bifurcated heat transfer mechanism, with the bifurcated heat transfer mechanism collecting the thermal energy and conducting the thermal energy to the surface.

Chou is completely silent with respect to a system comprising a bifurcated heat transfer mechanism, having a surface, that collects thermal energy and conducts the thermal energy to the surface thereof. Rather, Chou is merely directed at heating a

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moldable surface to facilitate pressing thereof. This is seen throughout the description of the invention of Chou. More specifically, Chou teaches heating an assembly, the assembly consisting of a mold, a thin moldable film layer, and a substrate. See ¶ [0053] and ¶ [0064]. As a result, "the elevated temperature can turn the resist [the thin moldable film layer] to its viscous state." See ¶ [0064]. However, Chou has no mention of employing thermal energy to heat the assembly, much less collecting thermal energy and conducting the thermal energy to a surface of the assembly, as defined by Applicants' claimed invention. Thus it becomes clear that Chou does not teach Applicants' claimed invention of a bifurcated heat transfer mechanism, having a surface, that collects thermal energy and conducts the thermal energy to the surface thereof.

Furthermore, in the Office action it was alleged that the substrate of Chou is "capable of being disposed to collect and develop a localized heat source therein [i.e. function as the bifurcated heat transfer mechanism]." See Office action, page 2. To that end, referring to ¶ [0038], it is stated the "substrate [is] relatively transparent to the radiation[.]" As a result, were the substrate to function as the bifurcated heat transfer mechanism, the substrate would be unable to collect thermal energy directed thereupon as it is substantially transparent to the radiation. Thus, it becomes evident that Chou teaches away from Applicants' claimed invention by teaching the substrate being substantially transparent to the radiation.

Further, Chou teaches illuminating at least a portion of a test pattern [imprinted test features] with radiation. See ¶ [0051]. To that end, "[i]llumination can be facilitated by using...a relative transparent substrate[.]" See ¶ [0051]. This is done such that Chou may measure light "transmitted through the

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illuminated test structure and the moldable material[.]” See ¶ [0038]. To that end, information relating to the measured light may be extracted and a signal may be generated based upon the information for controlling imprinting processes and materials. See ¶ [0039] - [0041]. As mentioned above, Applicants claim a bifurcated heat transfer mechanism, having a surface, that collects thermal energy and conducts the thermal energy to the surface thereof. To that end, were Chou modified to include Applicants’ claimed invention, and more specifically, were Chou modified such that the substrate may collect thermal energy, the substrate of Chou would not be substantially transparent to the radiation, and thus, Chou would not be able to measure light transmitted through the test structure, which is undesirable.

Based upon the foregoing, Applicants respectfully contend that Chou does not anticipate the invention defined by claim 1, as amended, and a *prima facie* case of obviousness is not present with respect to claim 1, as amended.

b. *Claim 8*

Claim 8, as amended, defines a patterning system, the system including, *inter alia*, a source of radiation to direct radiation toward a target; a wavelength discriminator to selectively allow first and second subsets of the radiation to reach the target, with the first subset including thermal energy; a mold positioned to allow the first and second subsets to propagate there through; and a thermal absorption layer, having a surface, disposed to collect the first subset and develop a localized heat source therein having heat energy associated therewith, with the heat source conducting the heat energy to the surface while maintaining a constant phase state.

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Applicants respectfully contend that the argument set forth above with respect to claim 1 applies with equal weight here and that claim 8, as amended, defines an invention suitable for patent protection.

c. *Claim 14*

Claim 14, as amended, defines a patterning system, the system including, *inter alia*, a source of radiation to direct radiation, having multiple wavelengths including thermal radiation, along a path, with the path extending between the source and a target; a wavelength discriminator to selectively allow a subset of the radiation to travel toward the target; and a bifurcated heat transfer mechanism having a surface disposed between the wavelength discriminator and the target to collect the thermal radiation and develop heat energy therein, and to conductively transfer the heat energy to the surface.

Applicants respectfully contend that the argument set forth above with respect to claim 1 applies with equal weight here and that claim 14, as amended, defines an invention suitable for patent protection.

2. Rejections under 35 USC 103(a)

In the Office action, claims 5, 10, and 17 were rejected under 35 USC section 103(a) as allegedly being unpatentable over Chou in view of United States patent 6,334,960 to Willson et al.

[hereinafter Willson] in further view of well known physics concepts. See Office action, page 3, paragraph 4 and page 4, paragraph 4. Applicants believe that this ground for rejection amounts to OFFICIAL NOTICE of well known teachings.

Specifically, in the Office action it was stated "that black based materials are known to have light and heat sink property

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qualities [hereinafter MATERIAL]." See Office action, page 4, paragraph 3. To that end, Applicants request production of document evidence of the MATERIAL and the suggestion to employ the MATERIAL to collect thermal energy directed thereupon and conduct the thermal energy to a surface. See MPEP 2144.03.


3. The Non-obviousness of the Dependent Claims

Considering that the dependent claims include all of the features of the independent claims from which they depend, these claims are patentable to the extent that the independent claims are patentable. Therefore, Applicant respectfully contends that the dependent claims define a system suitable for patent protection.

Applicants respectfully request examination in view of the remarks. A notice of allowance is earnestly solicited.

CERTIFICATE OF TRANSMISSION/MAILING


I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to the Commissioner for Patents.

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